

CLAIMS

1. An impeller for a pump, especially for a cooling water pump of an internal combustion engine, comprising a hub (11), a cover disk (14) which is disposed on the intake side and is provided with a central opening (15) for sucking in a conveyed medium, and with at least one blade (14) which is joined integrally with the cover disk (14) on the intake side and is provided with an inner section (13a) located in the region of the central opening and an outer section (13b) located in the region of the cover disk (14), characterized in that the impeller (5) is provided with a completely open configuration on the pressure side opposite of the cover disk (14) and that the blade (13) is curved at least in the interior section (13a) in a three-dimensional manner and is provided in the outer section (13b) with a substantially two-dimensional curvature.
2. An impeller according to claim 1, characterized in that the blades (13) are free from coverings or undercuts.
3. An impeller according to claim 1 or 2, characterized in that the blades (13) are curved in a two-dimensional manner in the region of the cover disk (14) and are rectangular to the plane of the cover disk (14).
4. An impeller according to one of the claims 1 to 3, characterized in that an axial projection (21) is provided on the cover disk (14) in the region of the central opening (15), which projection projects in the direction of the intake side.
5. An impeller according to claim 1, characterized in that the blade (13) on the intake side is flush with a front edge of the axial projection (21).
6. An impeller according to one of the claims 1 to 5, characterized in that the cover disk (14) is rounded off in the region of the central opening (15).
7. An impeller according to one of the claims 1 to 6, characterized in that the blades (13) are provided at least in the outer section (13b) on the

pressure side with a face surface (22) which is situated in a plane perpendicular to the axis (24) of the impeller (5).

8. An impeller according to one of the claims 1 to 7, characterized in that the blades (13) have a convex surface (16) which converges smoothly from the inner section (13a) to the outer section (13b).
9. An impeller according to one of the claims 1 to 8, characterized in that the blades (13) comprise a concave surface (17) which converges with an edge from the inner section (13a) to the outer section (13b).
10. An impeller according to one of the claims 1 to 9, characterized in that the blades (13) have in the outer section (13b) a substantially rectangular cross section.
11. An impeller according to one of the claims 1 to 10, characterized in that the blades (13) in the outer section (13b) have at least partly a trapezoid cross section.
12. An impeller according to one of the claims 1 to 11, characterized in that the impeller comprises radial discharge openings.
13. An impeller according to one of the claims 1 to 12, characterized in that the diameter (d) of the opening (15) of the cover disk (14) corresponds to 30% to 70%, preferably approximately 50%, of the diameter (D) of the impeller.
14. A pump, especially a cooling water pump for an internal combustion engine, with a bearing (3) in which a pump shaft (4) is held rotatably which passes through a wall (23) of the housing and to which is fastened an impeller (5) with axial intake opening on the side of the housing wall (23) opposite of the bearing (3) and with preferably radial discharge, characterized in that the impeller (5) is configured according to one of the claims 1 to 11.

15. A pump according to claim 14, characterized in that an axial face seal for sealing the pump shaft (4) is provided in the wall (23) of the housing, which seal is situated openly in the flow of the conveying medium.
16. A pump according to one of the claims 14 or 15, characterized in that the wall (23) of the housing is directly adjacent to a face side (22) of the blades (13).